Oxford Cambridge and RSA

OCR-set Assignment

Sample Assessment Material

OCR Level 3 Alternative Academic Qualification Cambridge Advanced Nationals in IT: Data Analytics

Unit F204: Data and the Internet of Everything (IoE)

Scenario Title: Connected Bus Company

This is a sample OCR-set assignment which should only be used for practice**.**

Valid for assessment from September 20XX to 20XX.
For use by students beginning the qualification in September 20XX.

This assignment **must not** be used for live assessment of students.

The live assignments will be available on our secure website, 'Teach Cambridge'.

The OCR administrative codes linked to this unit are:

- unit entry code F204
- certification code H119

The regulated qualification number linked to this unit is:

H/651/0972 610/3997/4

Duration

About 15 hours of supervised time (GLH)
(work that **must** be completed under teacher supervised conditions)

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Information and instructions for teachers

Using this assignment

This assignment provides a scenario and set of related tasks that reflect the Internet of Everything being developed for different purposes.

You can give this to students on or after 1 June 202X to help them understand it before they start using it for assessment. The dates for which students can use it for assessment are shown on the front cover.

The assignment:

- Is written so that students have the opportunity to meet the requirements of all assessment criteria for the unit.
- Will tell students if their evidence must be in a specific format. If the task does not specify a format, students can choose the format to use.
- **Must** be completed under teacher supervision. Any exceptions to this will be stated in the assessment guidance.

We have estimated that the assignment will take about 15 hours to complete. Students should need approximately:

- 6 hours to complete Task 1
- 6 hours to complete Task 2
- 3 hours to complete Task 3

You **must**:

- Use an OCR-set assignment for summative assessment of students.
- Familiarise yourself with the assessment criteria and assessment guidance for the tasks. These are given at the end of each student task. They are also with the unit content in **Section 4** of the Specification.
  Assessment guidance is only given where additional information is needed. There might not be assessment guidance for each criterion.
- Make sure students understand that the assessment criteria and assessment guidance tell them in detail what to do in each task.
- Read and understand **all** the rules and guidance in **Section 6** of the Specification **before** your students start the set assignments.
- Make sure that your students complete the tasks and that you assess the tasks fully in line with the rules and guidance in **Section 6** of the Specification.
- Give your students the **IT: Data Analytics Student guide to NEA assignments before** they start the assignments.

You **must not**:

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- Use live OCR-set assignments for practice or formative assessment. This sample assessment material **can** be used for practice or formative assessment.
- Use this sample assessment material for live assessment of students.
- Allow group work for **any** task in this assignment.
- Change any part of the OCR-set assignments or assessment criteria.

Pages 1-4 are for teachers only. Please do **not** give **Pages 1-4** to your students.

You can give **any** or **all** of the pages **that follow** to your students.

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Tasks for students and assessment criteria

Unit F204: Data and the Internet of Everything (IoE)

Scenario Title: Connected Bus Company

Valid for assessment from September 20XX to 20XX.
For use by students beginning the qualification in September 20XX.

Scenario

A local bus company wants you to propose an IoE solution that will provide customers with live updates of where the company's buses are and how many people are using each bus.

The position of the buses will be shown on a map on the smartphones of customers, providing them with the location and estimated time of arrival for buses. This will allow customers to plan their journey, by knowing which bus will arrive at each bus stop and when they will arrive.

The bus company would also like you to propose an additional idea for the IoE solution that will improve passenger experience.

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Task 1
Outlining an IoE solution

Topic Areas 1, 2, 5 and 6 are assessed in this task.

The task is:

Create the introduction to your solution proposal.

Your evidence **must** include:

- Your proposal.

Use the assessment criteria below to tell you what you need to do in more detail.

Pass	Merit	Distinction
P1: Summarise the user requirements. (PO2)	**M1: Describe** the stakeholder considerations for the solution. (PO2)	
P2: Explain the entities for the four pillars for the solution. (PO2)	**M2: Explain** how the entities will interact. (PO2)	
P3: Identify security issues for the devices in the solution. (PO2)	**M3: Explain** the mitigations that will be put in place to deal with the security issues identified. (PO2)	**D1: Identify** threats to data in transit in the solution and **explain** mitigation methods. (PO2)
P4: Describe the legal and ethical issues that need to be considered in the solution. (PO2)	**M4: Explain** how the legal and ethical issues will be addressed. (PO2)	

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Assessment Guidance

This assessment guidance gives you information to meet the assessment criteria. There might not be additional assessment guidance for each criterion. It is only given where it is needed. You must read this guidance before you complete your evidence.

Assessment Criteria	Assessment guidance
P1	• Students **must** select the relevant information from the scenario, **not** just repeat the whole scenario.
M1	• There is no assessment guidance for this criterion.
P2	• Students **must** list the entities and explain their roles in the solution. • Students can use a flow chart for this.
M2	• Students do **not** need to produce technical documentation for this criterion.
P3	• Students **must** identify at least **two** security issues.
M3	• There is no assessment guidance for this criterion.
D1	• There is no assessment guidance for this criterion.
P4	• Students **must** reference laws listed in **Unit F200** in relation to the scenario.
M4	• There is no assessment guidance for this criterion.

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Task 2

Creating the IoE solution proposal

Topic Areas 2, 3, 4 and 6 are assessed in this task.

The task is:

Create your solution proposal.

Your evidence **must** include:

- Your proposal.

Use the assessment criteria below to tell you what you need to do in more detail.

Pass	Merit	Distinction
P5: Describe how data will be collected. (PO4)	**M5: Explain** how and where data will be processed using appropriate technical documentation. (PO4)	**D2: Describe** the functionality of your additional idea for the solution. (PO4)
P6: Describe the devices and locations where data will be stored. (PO4)		
P7: Describe how the data collection devices used will be powered. (PO4)	**M6: Explain** benefits and limitations to the way the data collection devices will be powered in the solution. (PO3)	
P8: Describe how you will include HCI principles to meet user needs for the solution. (PO4)		
P9: Produce annotated wireframes for your HCIs. (PO4)		
P10: Describe the connectivity methods that will be used to		**D3: Justify** the connectivity methods chosen for the solution,

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transmit the data. (PO4)		taking transmission considerations into account. (PO3)

Assessment Guidance

This assessment guidance gives you information to meet the assessment criteria. There might not be additional assessment guidance for each criterion. It is only given where it is needed. You must read this guidance before you complete your evidence.

Assessment Criteria	Assessment guidance
P5	• Students can use technical documentation.
P6	• Students can use technical documentation.
M5	• There is no assessment guidance for this criterion.
P7	• There is no assessment guidance for this criterion.
M6	• There is no assessment guidance for this criterion.
P8	• Students **must** consider the needs of at least one user.
P9	• There is no assessment guidance for this criterion.
D2	• Students **must** complete **P5** to **P10**, **M5** and **M6** in relation to their additional idea.
P10	• There is no assessment guidance for this criterion.
D3	• This **must** be included in the proposal.

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Task 3

Presenting and suggesting improvements to the IoE solution

Topic Areas 1 to 6 are assessed in this task.

The task is:

Present and suggest improvements to your IoE solution.

Your evidence **must** include:

- Your updated proposal or a report.

Use the assessment criteria below to tell you what you need to do in more detail.

Pass	Merit	Distinction
P11: Present your solution to the client. (PO4)	**M7: Gather** feedback on the additional idea for the solution. (PO4)	**D4: Analyse** feedback to **identify** improvements that could be made to the additional idea for the solution. (PO3)
P12: Identify improvements that can be made to your solution in the future. (PO3)		**D5: Suggest** possible future developments (additional functions) to the IoE solution. (PO3)

Assessment Guidance

This assessment guidance gives you information to meet the assessment criteria. There might not be additional assessment guidance for each criterion. It is only given where it is needed. You must read this guidance before you complete your evidence.

Assessment Criteria	Assessment guidance
P11	• Students **must** use one of the methods of presentation listed in **Topic Area 6**. • Evidence can be the written presentation or a video recording.
M7	• Teachers **must** give feedback on the additional idea. • Feedback **must** focus on improvements that could be made to the additional idea.

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D4	• Suggested improvements **must** be based on the feedback received and focus on the additional idea.
P12	• Students **must** generate their own ideas for improvements.
D5	• There is no assessment guidance for this criterion.

NEA Command Words

The table below shows the command words that may be used in the NEA assignments and/or assessment criteria.

Command Word	**Meaning**
Adapt	• Change to make suitable for a new use or purpose
Analyse	• Separate or break down information into parts and identify their characteristics or elements • Explain the different elements of a topic or argument and make reasoned comments • Explain the impacts of actions using a logical chain of reasoning
Assess	• Offer a reasoned judgement of the standard or quality of situations or skills. The reasoned judgement is informed by relevant facts
Calculate	• Work out the numerical value. Show your working unless otherwise stated
Classify	• Arrange in categories according to shared qualities or characteristics
Compare	• Give an account of the similarities and differences between two or more items, situations or actions.
Conclude	• Judge or decide something
Describe	• Give an account that includes the relevant characteristics, qualities or events
Discuss (how/whether/etc)	• Present, analyse and evaluate relevant points (for example, for/against an argument) to make a reasoned judgement
Evaluate	• Make a reasoned qualitative judgement considering different factors and using available knowledge/experience
Examine	• To look at, inspect, or scrutinise carefully, or in detail
Explain	• Give reasons for and/or causes of something • Make something clear by describing and/or giving information
Interpret	• Translate information into recognisable form • Convey one's understanding to others, e.g. in a performance
Investigate	• Inquire into (a situation or problem)

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Justify	• Give valid reasons for offering an opinion or reaching a conclusion
Research	• Do detailed study in order to discover (new) information or reach a (new) understanding
Summarise	• Express the most important facts or ideas about something in a short and clear form

We might also use other command words but these will be:

- commonly used words whose meaning will be made clear from the context in which they are used
- subject specific words drawn from the unit content.

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